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Online Managment - Pro Courses: Provide Online Training Services for Working Professionals to Achieve Their Career Goals

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ONLINE MANAGEMENT - PRO COURSES

Provide Online Training Services for Working
Professionals to Achieve Their Career Goals

Course Title: Project Management

Course Number: ETM 545/645

Instructor: Dr. Richard Sperry

Term: Fall

Year: 2017

Author(s): Team-1

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Note:

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1- Purpose

The organization works on software projects that develops application software, website portals for private and government institutions, including its own projects related to website development. The latest project of this organization is called the *Online Management-Pro Courses* to provide online training services for working professionals to achieve their career goals. The purpose of this project is to develop an online training portal with courses for students and professionals aspiring to excel in management. This web portal will create a knowledge network that is expected to catalyze solutions for management challenges. This will be achieved by disseminating courses in order to help professionals who are growing in both private and government bodies.

2- Objective

In today's global competitive market, it is essential for a professional to be equipped with a plethora of skills. Professionals are expected to be proficient not only in technical skills, but also a wide range of human skills. The objective of the project is to achieve the complete development of the website portal that is aimed at helping professionals to develop proficient communication and interpersonal skills. It provides a platform that is driven towards the mission of producing professionals as future leaders in their respective fields through an integrated suite of various courses. The online training program offers various personality development courses on leadership, negotiation skills, problem solving and decision making skills. Apart from these courses, this program aims at strengthening and promoting principles of management to achieve excellence in their performance. The enrolled professionals on successful completion of the training program will receive the certification on management-pro courses accredited by the US Department of Education. We envision that our courses will increase the proficiency rate of the professionals and help them contribute towards not only their respective organizations but also the global industry as well as the human community transforming lives towards the better.

3- Assumptions

The following assumptions are made before initializing the entire project.

1. All the departments in the project have been formed with respective managers, e.g. IT Manager for the IT department, Finance Manager for the Finance department and so on.
2. As it is known that accreditation is required before offering any training and certification programs, we have approached the *Accrediting Council for Continuing Education and Training - US Department of Education* and have received the accreditation before initializing the project.
3. A contract has been signed with two private organizations namely private organization 1 and private organization 2 for website hosting services required in this project for the development of the portal. Private organization 2 will be approached only when the risk of website hosting issues occur when using the hosting services of private organization 1.
4. A contract has been signed with private organization 3 for additional resources like web developers and database engineers for our project on account of the risk of integration issues.
5. The working hours are 8 hrs/day for 5 days in a week (Monday - Friday) for this project.
6. No over-working hours are considered in the entire course of the project.

4- Organization Chart

This project requires 16 resource personnel from the point of initialization of the project till its completion. Our organization is of Matrix type with three levels. The Executive Board is the first level, followed by the departments in the second level. Each department is headed by a manager. Most of the managers have personnel under them shown in the level 3 in the organization chart. The organization chart is shown in Appendix A. The 16 resource personnel working on this project are discussed below along with the description of their primary responsibilities.

- 1. Project Manager:** The Project Manager, reporting to the executive board is one of the most important resources with a set of project management activities that include

communication with stakeholders, recruiting staff for the managers of the respective departments, analyzing change requests and estimating the budget. Apart from these activities, the project manager is responsible for all the activities in the entire lifecycle of the project as shown in the RACI Matrix in Appendix D. He is also responsible of evaluating the risks in the project along with designing mitigation/contingency plans, monitor and control the activities for the entire project along with the assistance of the managers of other departments. The project manager is expected to be well equipped with human skills, organizing and conceptual and technical skills.

- 2. R&D Manager:** The R&D manager heads the R&D department. He is accountable for research and technology development of the web portal. He will be involved in developing the components and course content of the web portal. On account of reaching each milestone of the project, the R&D manager is expected to deliver the milestone report to be circulated to other departments. Finally, he would also be involved in monitoring and controlling the web portal after its complete development.
- 3. Program Specialist:** The program specialist will assist the R&D Manager in primary tasks of defining the components for the web portal and developing course content. Apart from these tasks, the program specialist will also be involved in training the customer support specialists for the virtual communication system.
- 4. IT Manager:** Equipped with all technical skills, the IT manager is accountable for all the development and integration activities of the web portal. He would also take part in estimating the budget, analyzing change requests for the project and monitor and control the developed portal. The IT Manager will be the main point of contact for risk management as well as reporting all milestones. Apart from these tasks, the IT manager will be responsible for delivering all technical documentation on the project.
- 5. Web Developer:** The web developer is responsible for developing the web portal. Apart from adding the graphics to the portal, the finalized course materials have to be uploaded along with videos. The web developer works along with the database engineer and LMS

technician for developing and integrating the LMS module, the interactive website and the virtual communication system.

- 6. Database Engineer:** The database engineer is responsible for maintaining the database system for developing the interactive website with different information like course materials, students and instructor services in the LMS module and identify web hosting and integration issues.
- 7. Customer Support Specialists:** Two customer support specialists will be hired for responding to the queries of enrolled professionals once the web portal is complete. They will be trained by the program specialist on the entire portal and the virtual communication system so that any questions on the course content, schedule or the student services could be answered efficiently.
- 8. LMS Manager:** The LMS manager is responsible for the development and management of the Learning Management System (LMS). He will identify the key elements of the LMS like the student services and instructor services. He will be accountable for the complete development and integration of the LMS with the interactive web portal. Additionally, he will be responsible for delivering milestone reports and continue to monitor and control the portal.
- 9. LMS Technician:** The LMS technician reports to the LMS manager. Apart from assisting the LMS manager in all the primary activities, he will be involved in the development and testing of the LMS module with the web developer. He is also involved in the integration of LMS module with the interactive website.
- 10. Finance Manager:** The finance manager heads the finance department and is primarily responsible to estimate the budget for the project along with the project manager and the IT manager, and prepare the financial report. Apart from accounting, he will manage all resource and equipment expenses for the entire project and will be responsible for all financial reporting and control.

11. Accountant: The accountant who reports to the finance manager directly will assist in all budgeting and accounting affairs of the project. He will document all the resource and equipment expenses of the project and report to the finance manager.

12. Admin Manager: The admin manager heads the administration department and will be responsible for recruiting the resource personnel under the managers of each department. His other tasks will be to prepare and document thoroughly regular administrative reports.

13. Public Relations Manager: The public relations manager is the head of the public affairs department. He is primarily responsible for communication with the stakeholders along with the project manager. Prior to the initialization of the project, public relations manager would have acquired the accreditation for the training program. Apart from these responsibilities, he will be consulted for the course content to be included according to the needs of the current professionals. On completion of the project, the public relations manager will take up the marketing responsibilities required for the program.

14. Instructors: Two instructors will be hired for this project to instruct all the courses to the enrolled professionals online. They will be involved in defining and developing the course components. With their rich technical and orientation skills in management, they will be responsible for preparing all the course materials according to the defined course components. The instructors will continue to report to the LMS manager after completion of the project.

All the activities and the resources responsible, accountable and resources to be consulted and informed are shown in the RACI Matrix in Appendix D. Along with this, the Resource Load Table in Appendix K shows the effort in time of all the aforementioned 16 resource personnel on this project.

5- Stakeholder Analysis

An analysis on the different stakeholders is completed for this project. The stakeholders are divided into following two groups.

- 1- Internal
- 2- External

The internal stakeholders include the executive board, the project manager and all the five management teams who will work directly on the project. The managers of these teams will communicate bi-weekly for the status of the project through communication modes like email, phone, and meetings. The power and interest of each internal stakeholder has been rated from 1 to 5 and their roles are described in the table called Internal Stakeholders in Appendix B.

The external stakeholders include the three private organizations, the council that provides the accreditation, individual students and professionals who are in different fields working in different private and government entities and finally the shareholders. The private organization 1 and 2 are approached for their website hosting services. The private organization 3 is contracted for additional resources on account of integration issues in the project. The Accrediting Council for continuing education and training that belongs to the US Department of Education has accredited the training program. The power and interest of each external stakeholder has been rated from 1 to 5 and their roles are described in the table called External Stakeholders in Appendix B.

6- Schedule

The project will begin on January 1, 2018 and is scheduled to be completed within 55.4 weeks on January 21, 2019 (including the two risks to be discussed later). The Work Breakdown Structure (WBS) defines the scope of the project into six deliverables and 34 tasks as shown in Appendix C.

The expected time for each activity was calculated using the three-point estimating technique; the optimistic, most likely, and pessimistic times were estimated based on expert's criteria and

additional research. These values were registered on the PERT Effort Table in Appendix F along with the variance and standard deviation of each task.

After defining the expected time for each task, we created the Activity on Node (AON) Network to establish the logical sequence of the activities; we also calculated the critical path at 50 weeks as shown in Appendix G. This appendix shows details of starting times, finishing times, and slack times for each task.

The probability of delivering the project within 50 weeks (critical path) is only 50%; however, this value did not suffice and we needed to establish a completion date under a higher confidence level. We created a probability diagram as shown in Appendix H. We used the mean, variance, and standard deviation values from the PERT Effort Table in Appendix F to calculate the time reserve needed to deliver the project with a 95% probability. Therefore, the duration of the project is 55.4 weeks which includes the critical path and time reserve.

The baseline schedule for the deliverables, and their respective tasks are denoted in Appendix I. We have included four milestones at critical stages. The first one is at the beginning of the project after completing the feasibility analysis. The second milestone is at the end of the course content deliverable. The third milestone is after integrating the LMS and interactive website, and the fourth milestone is at the end of the project. Also, the two sheets of Appendix I called Risk1 Website Hosting Issues and Risk 2 Integration Issues depict the baseline schedule on occurrence of the website hosting risk and integration risks, respectively. It is shown in both risks that there is a delay of 2 weeks in the project. Therefore, the duration of 55.4 weeks for this project also includes the duration of the risk contingency activities to be executed when the two risks occur during the project. The summary level Gantt chart in Appendix J facilitates the visualization of the project schedule and will help keep track of progress.

7- Resources

The project will require 7,527 working hours during 50 weeks at a cost of \$189,790 dollars. This value has been calculated by considering the labor requirements of each department along with their corresponding costs; details of this analysis can be found in Appendix K. Furthermore, we have considered equipment costs for \$27,000 (see Table 1 below) as well as a risk reserve

(Appendix E) for 15,240. These three values result in a total project cost of \$232,030 as well as the duration of the project will be increased to 55.4 weeks by accepting both risks.

Table 1- Equipment Costs

Title	Computer + Printer	Software
Customer Support Specialists	\$2000	\$1000
Instructors	\$2000	-
Web Developer	\$3000	\$4000
Database Engineer	\$3000	\$4000
Hosting Services	\$8000	
Total	\$27,000	

The resource load table in Appendix K takes into account the hours needed to complete each task from the WBS in Appendix C by each of the project team members. There is no resource utilization issue since none of the human resources have been assigned to more than a 40 hour per week workload. Therefore, resource leveling for this project is not required. But we have conducted an analysis of the resource requirements in hours per week for all departments. As an example, the resource requirements of IT, LMS, and R&D managers have been shown in the graphs over the entire duration of the project schedule in Appendix K.

8- Risk Management

According to our research, the web development projects or the software development projects often face the risks of website hosting issues, compatibility issues of different modules and integration issues. Therefore this project which is primarily the development of a web portal offering an integrated suite of courses online through graphics, videos and different document formats foresees two risks and they are website hosting issues and integration issues.

We have established a probability of 70% for the first risk of website hosting issues, and a probability of 50% for the second risk of integration issues based on expert's opinion and research. We accept both the risks and therefore have designed the risk contingency plans. The

description of both the risks and their impacts along with the contingency plans have been described below.

Risk Statement 1

During the course of the project, when working towards the third milestone, there is a risk of Website Hosting Issues. These issues include:

- Web servers being slow
- Website's layout is incorrect
- Having too many limitations on the hosting servers

Probability: 70%

Delay Caused: 2 Weeks

Risk 1 Contingency Plan: To utilize the website hosting services of another private company called private organization 2 contracted for their services when initializing the project.

Resources Needed:

1. Hosting Services by another Company: \$8000
2. Staff:

No.	Staff	Total Hours in 2 weeks	Total wages
1	Web Developer	80	\$1600
2	Database Engineer	80	\$1600
3	Program Specialist	40	\$800
4	LMS Technician	60	\$1200

Total Labor Cost: \$5,200

Total Budget for Risk 1: Hosting Services + Total Labor Cost: \$8000 + \$5200 = \$13,200

Risk Statement 2

During the last phase of the project, when all developed modules are being integrated, there is a risk of Integration issues. These issues occur due to:

- Different software used in the development of individual modules
- Graphics integration

- Integration of videos into the website.
- Compatibility of dynamic virtual communication system

Delay Caused: 1 Week

Probability: 50%

Risk 2 Contingency Plan: The plan is to utilize additional resources experienced in development from private organization 3, which has been given the contract when the project was initialized. As per the agreement, the issues need to be fixed in 1 week at a cost \$12,000 (Taxes included).

Using the EMV analysis, the risk reserve and the schedule reserve for both the risks have been calculated which is shown in Appendix E. Risk reserve for Risk 1 is \$9,240 and schedule reserve is 7 days. Risk reserve for Risk 2 is \$6,000 and schedule reserve is 5 days. Therefore for the entire project, the total risk reserve is \$15,240, and total schedule reserve is 12 days.

9- Project Monitoring, Control, and Evaluation

With the aim of reviewing the progress of different activities of the project, monitoring schedule, scope, budget, problems, priorities, and exchanging other relevant information to the project, weekly meetings will be held with the entire project team to achieve monitoring and controlling of all aspects of the project performance. As mentioned in the project plan, frequently overview and detailed reports will be prepared.

Four milestones are defined as follows throughout of the duration of the project to control and evaluate the performance of the project activities and review the status of the project.

- Milestone 1- February 26th
- Milestone 2- May 14th
- Milestone 3- October 15th
- Milestone 4- December 15th

The progress reports will be prepared at the mentioned milestones and the same information will be communicated with stakeholders. If the milestones do not meet the specified completion dates, then the entire project team will be alerted to consider prompt actions for solving the issues.

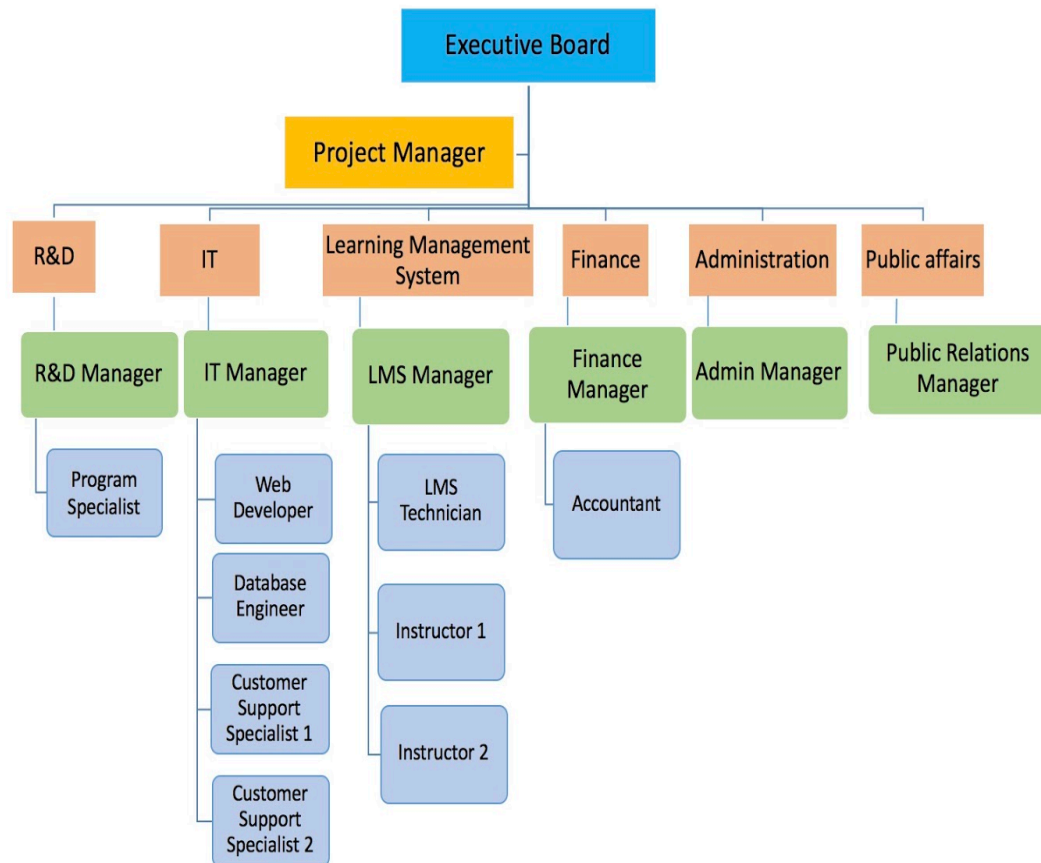
The earned value analysis will be conducted to monitor and control the entire process of the project. The activity cost (AC) values calculated in Appendix K have been used to define the baseline budget (Planned Value) using the 50-50 rule as shown in Appendix L. The planned value chart illustrates how the total labor cost of \$189,790 is distributed among each task in the entire project duration. The Cost Variance (CV), Schedule Variance (SV), Cost Performance Index (SPI), Schedule Performance Schedule (SPI), Estimated Cost to Complete (ETC), and Estimated Cost at Completion (EAC) will be considered for monitoring the progress of the project. All the mentioned procedure along with the formulas are applied and listed in Appendix M. As illustrated in Appendix M, by applying Earned Value Analysis, the Cybernetic Control system is considered for this project. Therefore, the Cost and Schedule Variance indices are considered for controlling the project progress.

10- Termination

The project is expected to be a success based on the risks evaluated. After successfully testing and launching the web portal, the project will be terminated by integration method. IT department is mainly responsible for monitoring and control of the web portal. Also, the other departments assist the IT manager in monitoring and control process. Two customer support specialists would start the training with the program specialist and report directly to the IT manager. A final report will be prepared by all the departments led by the project manager. As shown in the appendix N, a checklist is prepared for project termination. A notification of project completion will be sent to the executive board. The marketing strategy will be implemented and considered by public affairs department.

11- Appendices

11-1- Appendix-A- Organization Chart (Matrix Type)

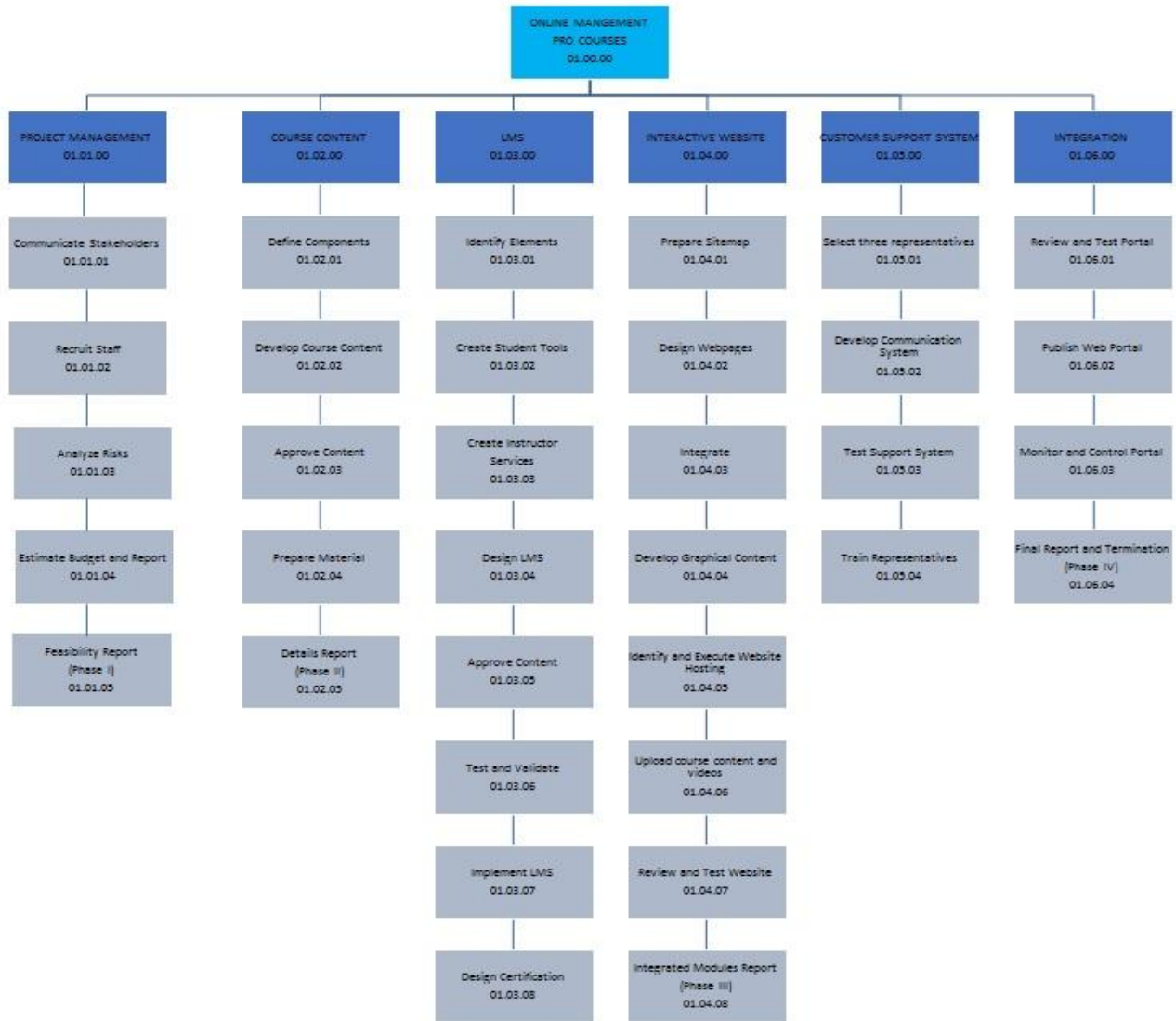


11-2- Appendix-B- Stakeholder Analysis

NAME OR GROUP	POWER (Low =1, High = 5)	INTEREST (Low =1, High = 5)	FREQUENCY OF COMMUNICATION	COMMUNICATION MODE	COMMENTS (INTEREST IN THE PROJECT)
INTERNAL STAKEHOLDERS					
Executive Board	5	5	2 weeks	Letter, Email, Phone, Meeting	Have great interest in the project and power to make it successful by securing project resources, budget within the scope and schedule of the project
Project Manager	4	5	2 weeks	Letter, Email, Phone, Meeting	High Interest to ensure that the objectives and business needs are clear and ensure smooth operation of the project. Has high power to ensure the management of risks in the project
IT Management	4	5	2 weeks	Email, Phone, Meeting	Interest in achieving all the technical requirements within the decided budget and timeframe
Administration Management	4	5	2 weeks	Email, Phone, Meeting	High interest to ensure the availability of all resources and equipments
Finance Management	4	5	2 weeks	Letter, Email, Phone, Meeting	High interest and power in finalizing the budget for the project and optimizing capacity of the resources.
R&D Management	5	5	2 weeks	Email, Phone, Meeting	High power and interest in ensuring the content requirements and research and technology development for the project
Public Relations Management	2	5	2 weeks	Email, Phone, Meeting	High interest in marketing, communication and public affairs
Instructors	1	5	2 weeks	Email, Phone, Meeting	High interest in imparting skills and knowledge to management professionals and aspirants

EXTERNAL STAKEHOLDERS					
Private Organization 1 for website hosting services.	2	4	1 week	Letter, Email, Meeting	To provide the website hosting services for the project. High interest to achieve mutual co-operation and benefits through the project.
Private Organization 2 for website hosting services	2	4	1 week	Letter, Email, Meeting	As a standby for website hosting services for the project on account of a failure of Private Organization 1. High interest to achieve mutual co-operation and benefits through the project.
Private Organization 3 for providing resources for Integration Issues	2	4	1 week	Letter, Email, Meeting	As a standby for integrating all the modules within the portal on account of a risk of integration issues. High interest to achieve mutual co-operation and benefits through the project.
Accrediting Council for Continuing Education and Training - US Department of Education	5	5	At the beginning of the project, completion of project and during Issue of certificate to the students of the program	Letter, Email, Meeting	The Council has high power in approving and accrediting the certification program which is the outcome of this project. Has high interest for public welfare, advanced learning of the professionals in the country.
Individual Students/ Professionals from different Organizations	2	5	After completion of the project	Email, Phone	High interest to achieve excellence in management skills
Shareholders	3	4	At the beginning and completion of the Project	Email, Meeting	Considerable power and interest in the shares of the company for benefits from the project.

11-3- Appendix-C- Work Breakdown Structure (WBS)



11-4- Appendix-D-RACI Matrix

	TASKS	Project Manager	Executive Board	R&D Manager	Program Specialist	IT Manager	Web Developer	Database Engineer	Customer Supporter 1	Customer Supporter 2	LMS Manager	LMS Technician	Admin Manager	Finance Manager
1	Online Management Pro Courses													
1.1	Project Management													
1.1.1	Communicate with Stakeholders	R	I	C		C					C		C	C
1.1.2	Recruit Staff	R	I	R		R					R		A	R
1.1.3	Analyze Risks	R	I	C	C	A	C	C			R	C	R	C
1.1.4	Estimate Budget	R	I			A					R	C	R	R
1.1.5	Deliver Feasibility Report on the Project	R	I	R	C	A	C	C			R	C	R	R
1.2	Course Content													
1.2.1	Define components	R	I	A	I									
1.2.2	Develop Course Contents	R	I	A										
1.2.3	Approve Contents	R	I	A										
1.2.4	Prepare Materials	R												
1.2.5	Course Content Details Report	R	I	A	I									
1.3	LMS (Learning Management System)													
1.3.1	Identify elements of LMS	R		I							A		R	
1.3.2	Create Student Tools	R				R	R	R			A	C		
1.3.3	Create Instructor Services	R				R	R	R			A	R		
1.3.4	Design LMS	R		C		R	R	R			A	R		
1.3.5	Approve Contents	R				R	R	R			A			
1.3.6	Test and Validate	R				R	R	R			A	R		
1.3.7	Implement the LMS	R				R	R	R			A	C	C	
1.3.8	Design the Certification for Student	R	I	C		A	R	R			C	C		
1.4	Interactive Website													
1.4.1	Prepare Stenaps	R		C	C	A	R				C			
1.4.2	Design Webpages	R		R	I	A	R				R			
1.4.3	Integrate	R		C	I	A	C	C			R			
1.4.4	Develop Graphical Content	R		C	I	A	R				I			
1.4.5	Identify and Execute Website Hosting	R		R	C	A	C	R			C			R
1.4.6	Upload Course Content and Videos	R		C	I	A	R				I			
1.4.7	Review and test the Website	R		C	C	A	R	R			R			
1.4.8	Deliver Report on Integrated Modules	R	I	R	C	A	R	R			R	R		
1.5	Customer Support System													
1.5.1	Select 2 Customer Support Representatives	R				A							R	C
1.5.2	Develop the Virtual Communication System	R		A		R	C	I						
1.5.3	Test the Support System	R	I	C		A	R	R						
1.5.4	Train Representatives	R		C	C	A	I		C					
1.6	Integration													
1.6.1	Review and Test Portal	R	I	C	C	A	C	R			R			
1.6.2	Publish Web Portal	R	I	C	I	A	R	R			R	C		
1.6.3	Monitor and Control Portal	R		R	I	A	R	R			R	C		
1.6.4	Final Report and Termination	R	I	R	R	A	R	R			R		R	R
LEGEND														
R	Responsible													
A	Accountable													
C	Consult													
I	Inform													

11-5- Appendix-E-Risk Management

Risk Statement 1:

During the course of the project, when working towards the third milestone, there is a risk of Website Hosting Issues. These issues include:

- Web servers being slow
- Website's layout is incorrect
- Having too many limitations on the hosting servers.

Probability: 70%

Delay Caused: 2 Weeks

Risk Contingency Plan: To utilize the website hosting services of another private company which was decided to be a standby when initializing the project.

Resources Needed:

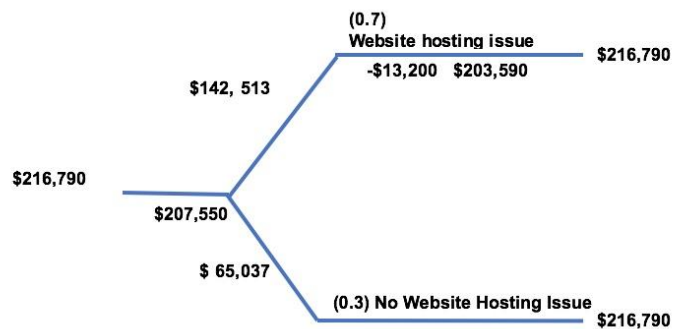
- 3 Hosting Services by another Company: \$8000
- 4 Staff:
-

No.	Staff	Total Hours in 2 weeks	Total wages
1	Web Developer	80	\$1600
2	Database Engineer	80	\$1600
3	Program Specialist	40	\$800
4	LMS Technician	60	\$1200

Total Labor Cost: \$5,200

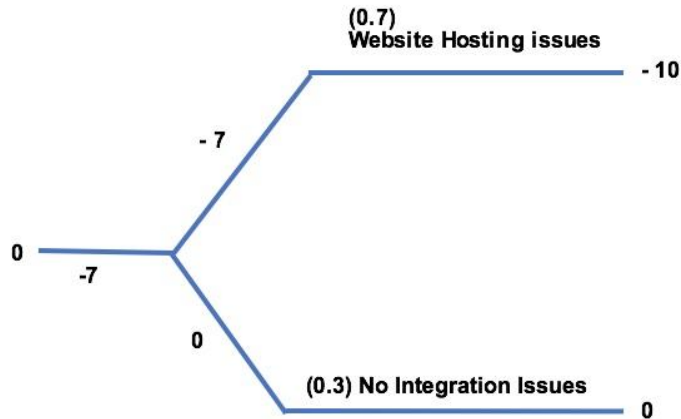
Total Budget for Risk 1: Hosting Services + Total Labor Cost: \$8000 + \$5200 = \$13,200

To Calculate Risk Reserve using EMV Analysis:



Risk 1 Reserve: $\$216,790 - \$207,550 = \$9,240$

To Calculate Schedule Reserve from EMV analysis:



Schedule Reserve: $0 - (-7) = 7$ days

Risk Statement 2:

During the last phase of the project, when all developed modules are being integrated, there is a risk of Integration issues.

These issues occur due to:

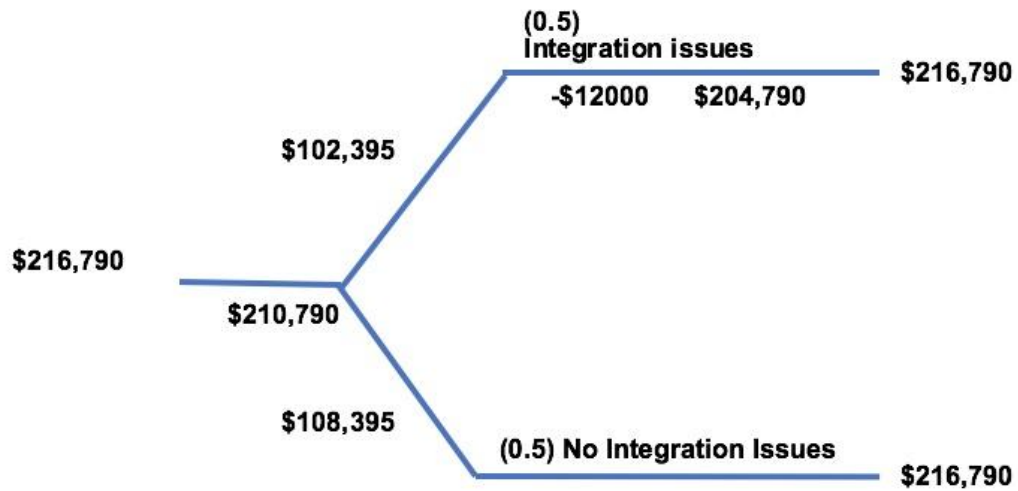
- Different software used in the development of individual modules
- Graphics integration
- Integration of videos into the website.
- Compatibility of dynamic virtual communication system.

Delay Caused: 1 Week

Probability: 50%

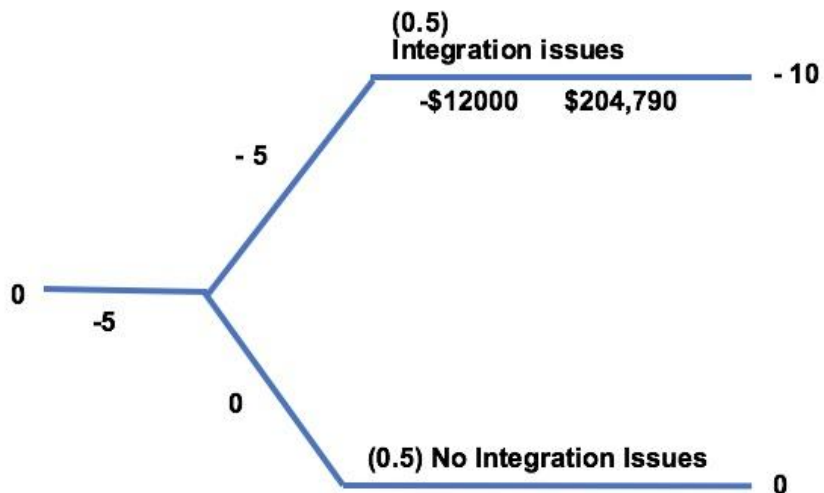
Risk Contingency Plan: Outsource the portal integration issue for fixing them, to a private party with good development experience.

As per the agreement, the issues need to be fixed in 1 week at a cost \$12,000 (Taxes included).
 To Calculate Risk Reserve using EMV Analysis:



Risk 2 Reserve: $\$216,790 - \$210,790 = \$6,000$

To Calculate Schedule Reserve from EMV analysis:

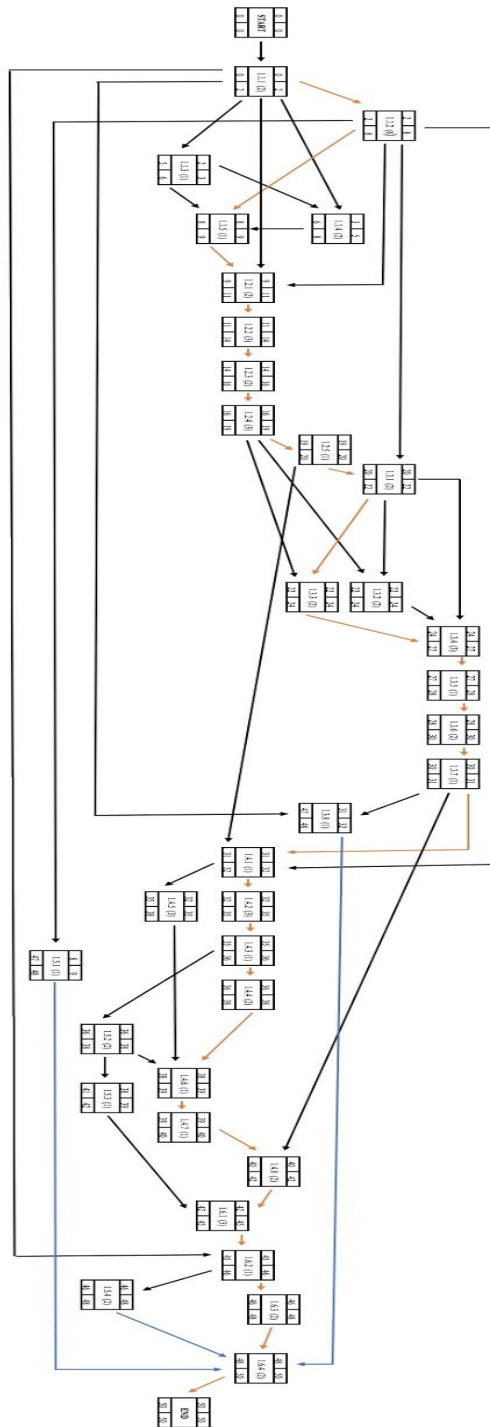


Schedule Reserve: $0 - (-5) = 5$ days

ID	Task	Optimistic Time	Most likely Time (Day)	Pessimistic Time	Time Estimate (TE) IN DAYS	Time Estimate (TE) IN WEEKS	Variance	Standard Deviation	Predecessor Activities	Slack
1.1	Project Management									
1.1.1	Communicate with Stakeholders	9	10	11	10.00	2.00	0.11	0.33		0
1.1.2	Recruit Staff	26	30	34	30.00	6.00	1.78	1.33	1.1.1	0
1.1.2.1	Job Posting & Interview Process	12	13	15	13.17	2.63	0.25	0.50		
1.1.2.2	Selection Process of Staff & Instructors	8	9	10	9.00	1.80	0.11	0.33		
1.1.2.3	Orientation & Training	6	8	9	7.83	1.57	0.25	0.50		
1.1.3	Analyze Risks	3	5	7	5.00	1.00	0.44	0.67	1.1.1	3
1.1.4	Estimate Budget	8	9	16	10.00	2.00	1.78	1.33	1.1.1,1.1.3	4
1.1.5	Deliver Feasibility Report on the Project	4	5	6	5.00	1.00	0.11	0.33	1.1.2, 1.1.3, 1.1.4	0
1.2	Course Content									
1.2.1	Define components	8	10	12	10.00	2.00	0.44	0.67	1.1.1, 1.1.2,1.1.5	0
1.2.2	Develop Course Contents	13	15	17	15.00	3.00	0.44	0.67	1.2.1	0
1.2.3	Approve Contents	8	10	12	10.00	2.00	0.44	0.67	1.2.2	0
1.2.4	Prepare materials	14	15	16	15.00	3.00	0.11	0.33	1.2.3	0
1.2.5	Course Content Details Report	4	5	6	5.00	1.00	0.11	0.33	1.2.4	0
1.3	LMS (Learning Management System)									
1.3.1	Identify elements of LMS	8	10	12	10.00	2.00	0.44	0.67	1.1.2, 1.2.5	0
1.3.2	Create Student Tools	8	10	12	10.00	2.00	0.44	0.67	1.2.4, 1.3.1	0
1.3.3	Create Instructor Services	8	10	12	10.00	2.00	0.44	0.67	1.2.4, 1.3.1	0
1.3.4	Design LMS	14	15	16	15.00	3.00	0.11	0.33	1.3.1,1.3.2, 1.3.3	0
1.3.5	Approve Contents	4	5	6	5.00	1.00	0.11	0.33	1.3.4	0
1.3.6	Test and Validate	7	10	13	10.00	2.00	1.00	1.00	1.3.5	0
1.3.7	Implement the LMS	3	5	7	5.00	1.00	0.44	0.67	1.3.6	0
1.3.8	Design the Certification for Student	3	5	7	5.00	1.00	0.44	0.67	1.3.7, 1.1.1	16
1.4	Interactive Website									
1.4.1	Prepare Sitemap	4	5	6	5.00	1.00	0.11	0.33	1.1.2, 1.2.5, 1.3.7	0
1.4.2	Design Webpages	13	15	17	15.00	3.00	0.44	0.67	1.4.1	0
1.4.3	Integrate	4	5	6	5.00	1.00	0.11	0.33	1.4.2	0
1.4.4	Develop Graphical Content	8	10	12	10.00	2.00	0.44	0.67	1.4.3	0
1.4.5	Identify and Execute Website Hosting	13	15	17	15.00	3.00	0.44	0.67	1.4.1	3
1.4.6	Upload Course Content and Videos	3	5	7	5.00	1.00	0.44	0.67	1.4.4, 1.4.5, 1.5.2	0
1.4.7	Review and test the Website	4	5	6	5.00	1.00	0.11	0.33	1.4.6	0
1.4.8	Deliver Report on the Integrated Modules	8	10	12	10.00	2.00	0.44	0.67	1.3.7, 1.4.7	0
1.5	Customer Support System									
1.5.1	Select 2 Customer Support Representatives	3	5	7	5.00	1.00	0.44	0.67	1.1.2	39
1.5.2	Develop the Virtual Communication System	7	10	13	10.00	2.00	1.00	1.00	1.4.3	0
1.5.3	Test the Support System	4	5	6	5.00	1.00	0.11	0.33	1.5.2	3
1.5.4	Train Representatives	8	10	12	10.00	2.00	0.44	0.67	1.6.2	2
1.6	Integration									
1.6.1	Review and Test Portal	13	15	17	15.00	3.00	0.44	0.67	1.4.8, 1.5.3	0
1.6.2	Publish Web Portal	4	5	6	5.00	1.00	0.11	0.33	1.6.1, 1.1.1	0
1.6.3	Monitor and Control the Portal	7	10	13	10.00	2.00	1.00	1.00	1.6.2	0
1.6.4	Final Report and Termination	7	10	13	10.00	2.00	1.00	1.00	1.3.8, 1.5.1, 1.5.4, 1.6.3	0

11-7- Appendix-G- Activity on Node (AON)

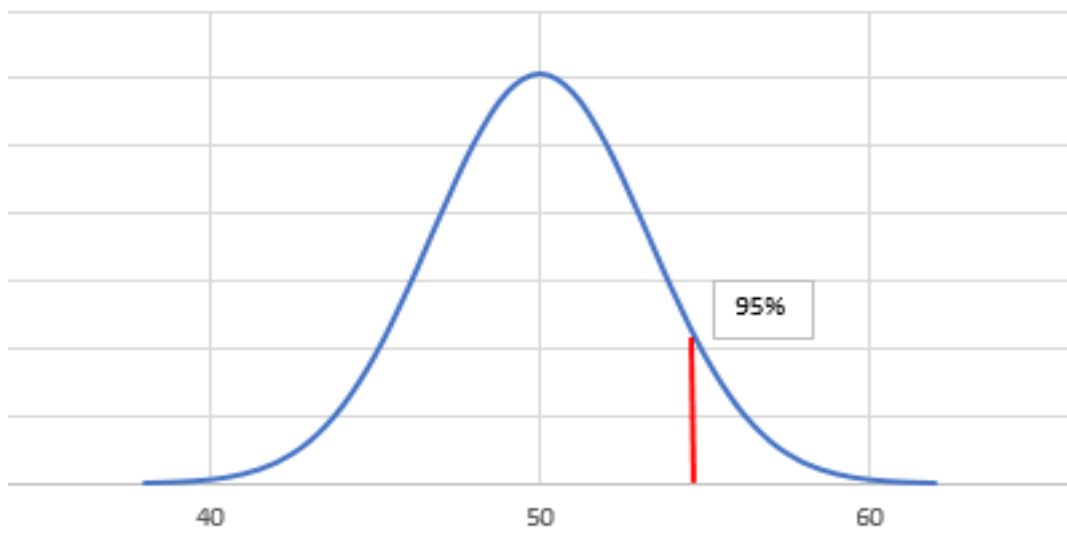
- Baseline Schedule: 50 weeks
- Orange arrows indicate the Critical Path



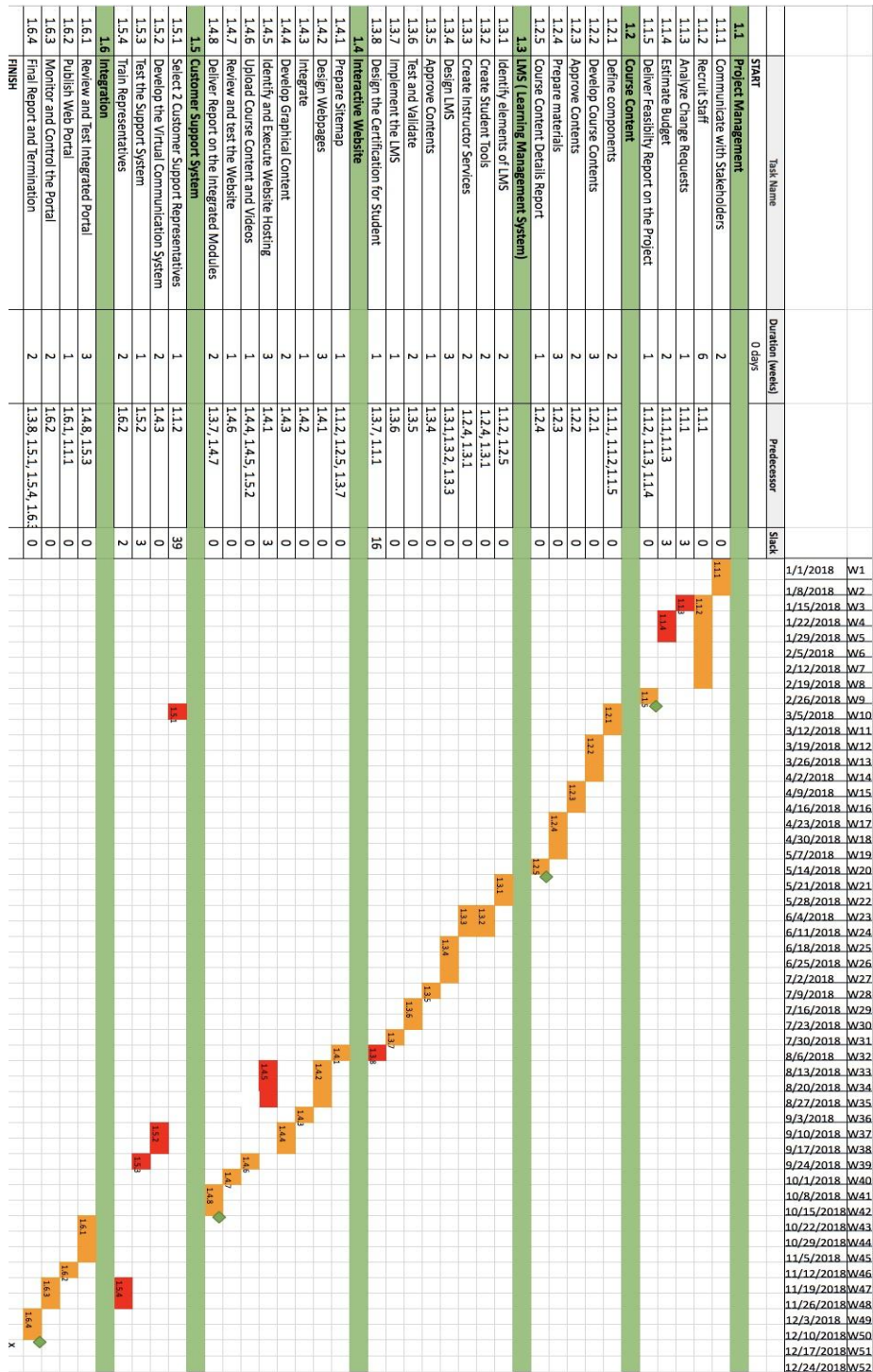
11-8- Appendix-H- Probability Diagram

There is a 95% probability of completing the project in 55.4 weeks.

NETWORK SLACK			
Confidence	z	D	Time Reserve
95%	1.645	55.4	5.4

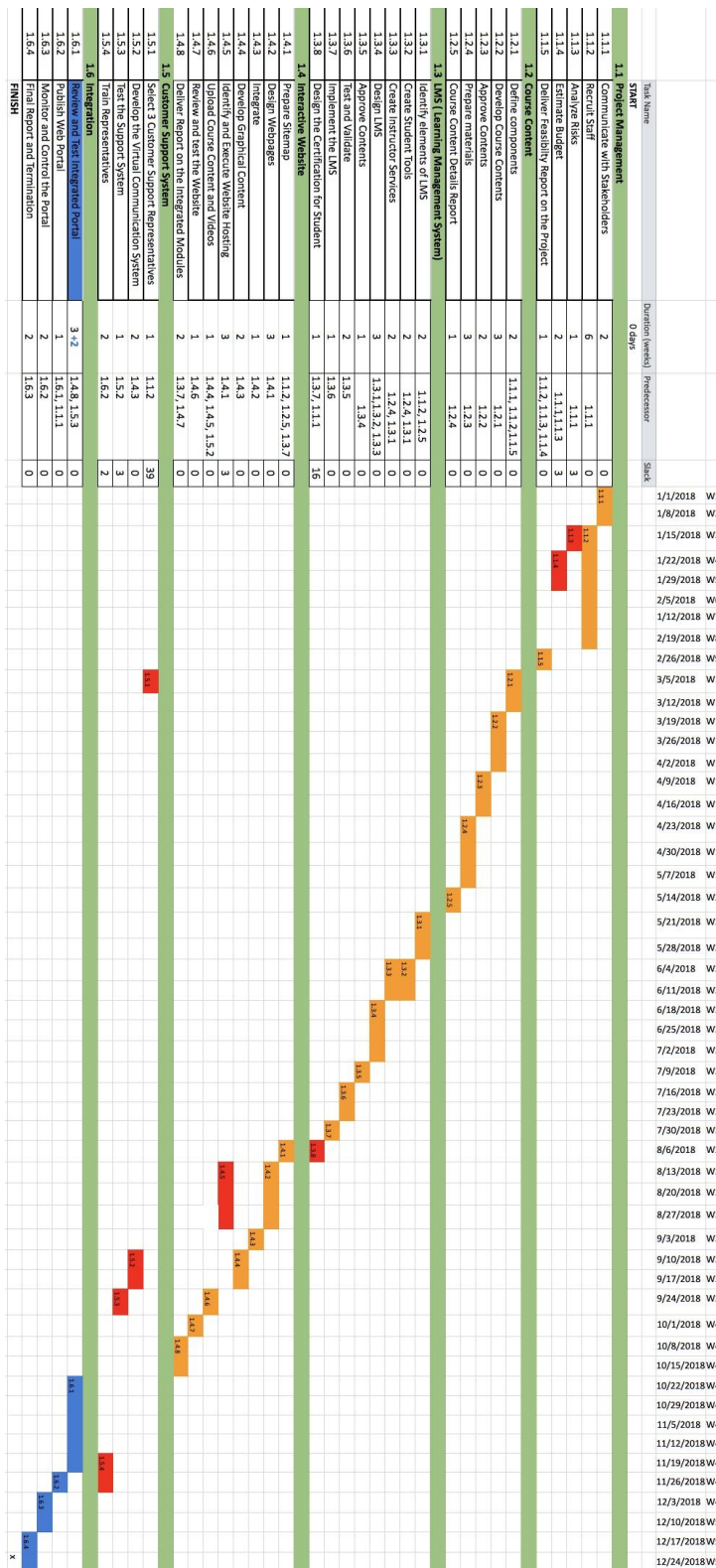


11-9- Appendix-I- Baseline Schedule



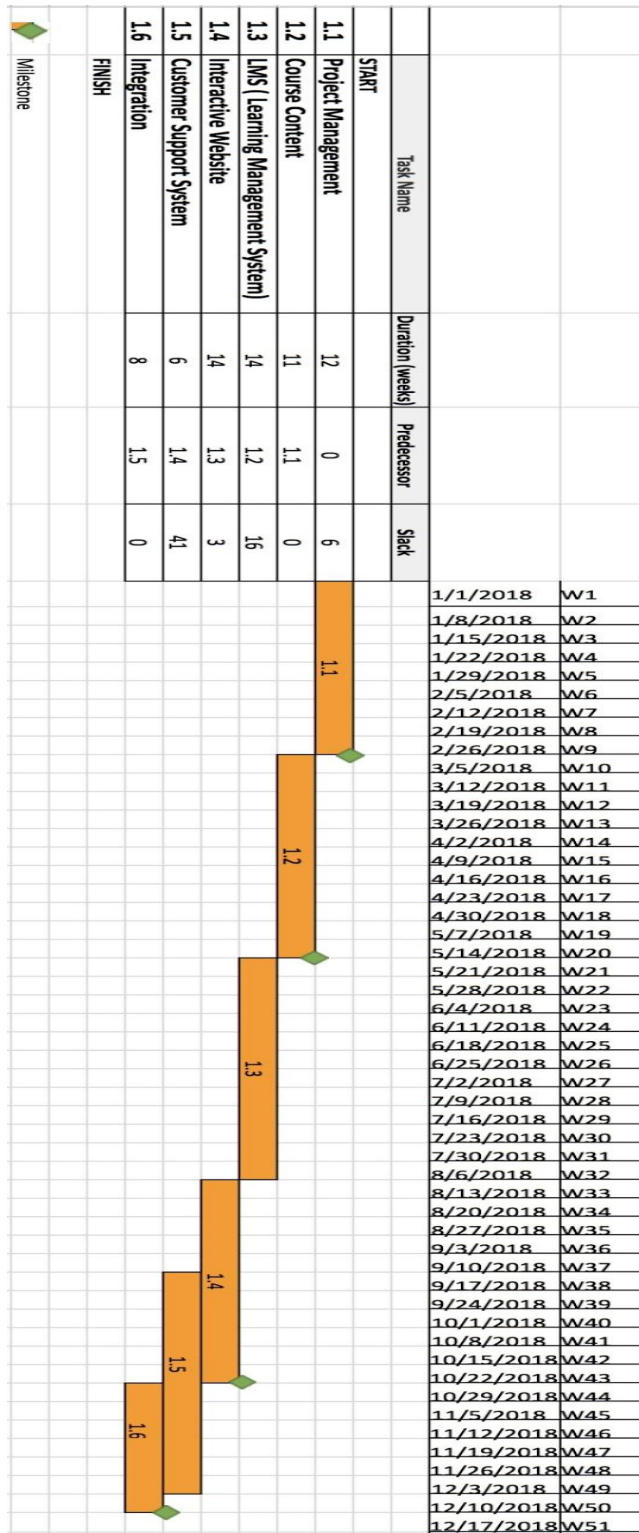
Appendix-I-A-Baseline schedule without risk

Schedule of 50 weeks



Appendix-I-C-Baseline schedule under risk 2 (Integration issues, indicated in blue) with new Schedule of 52 weeks)

11-10- Appendix-J- Summary Level Gantt Chart



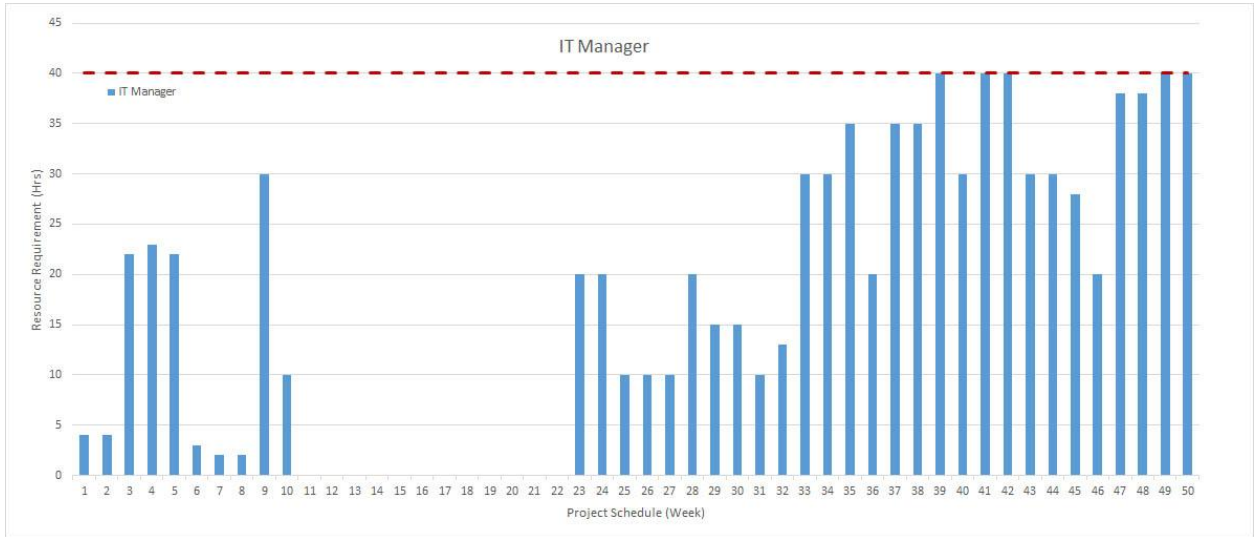
11-11- Appendix-K- Resource Load Table

[illegible][illegible]

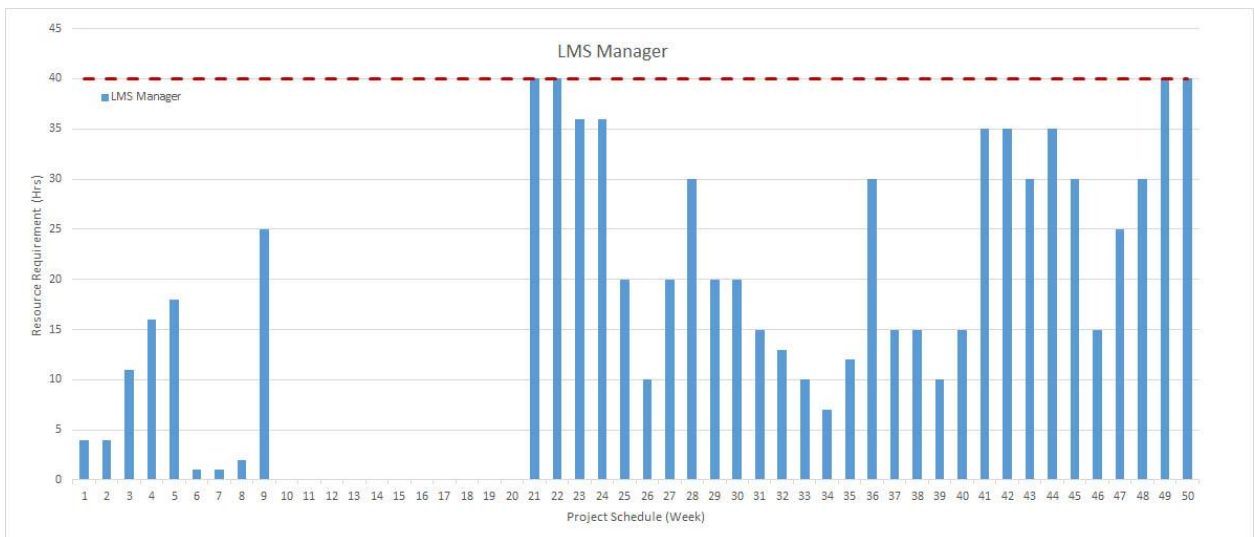
ID		Week 1		January				February				March				April				May				June				July				August				September				October				November				December				January					
		(Hrs)	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39	W40	W41	W42	W43	W44	W45	W46	W47	W48	W49	W50					
	Program Specialist	532		0	0	5				0	0	0	0	0	2	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	15	13	15	10	20	18	12	20	25	25	35	40	32	0	40	40	40	40
1.1.3	Analyze Change Requests	5				5																																																			
1.1.5	Deliver Feasibility Report on the Project	2											2																																												
1.2.1	Define Components	60												30	30																																										
1.2.5	Course Content Details Report	5																										5																													
1.4.1	Prepare Sitemap	20																																																							
1.4.2	Design Webpages	15																																																							
1.4.3	Integrate	10																																																							
1.4.4	Develop Graphical Content	16																																																							
1.4.5	Identify and Execute Website Hosting	28																																																							
1.4.6	Upload Course Content and Videos	12																																																							
1.4.7	Review and test the Website	20																																																							
1.4.8	Deliver Report on the Integrated Modules	50																																																							
1.5.2	Develop the Virtual Communication System	22																																																							
1.5.4	Train Representatives	60																																																							
1.6.1	Review and Test Portal	107																																																							
1.6.3	Monitor and Control the Portal	20																																																							
1.6.4	Final Report and Termination	80																																																							

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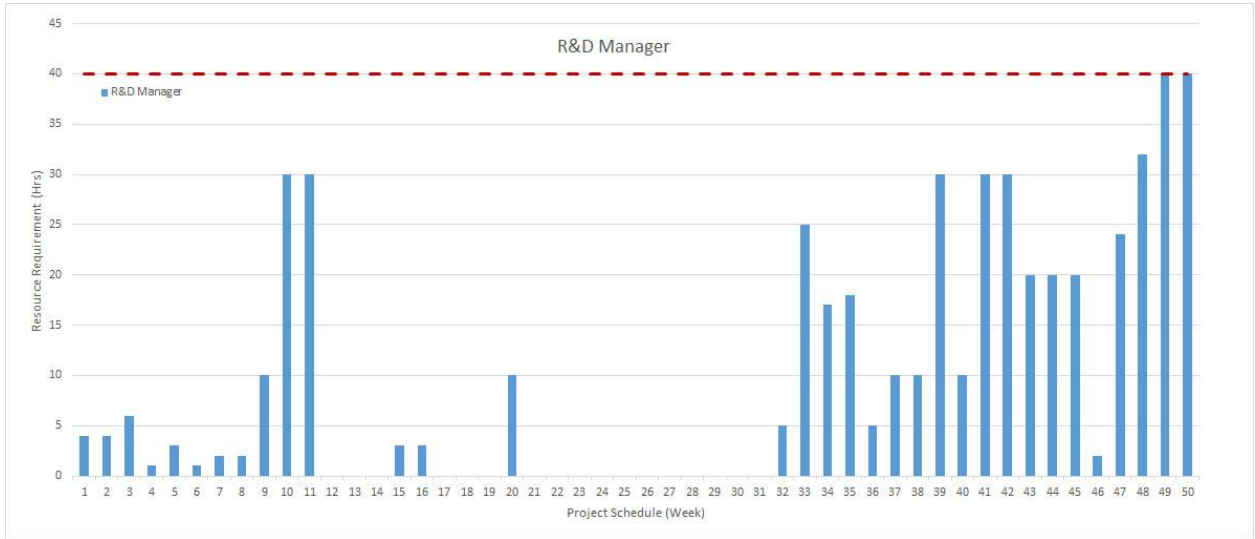
[illegible]30 | Page



Resource requirements for IT Manager over the entire duration of the project schedule



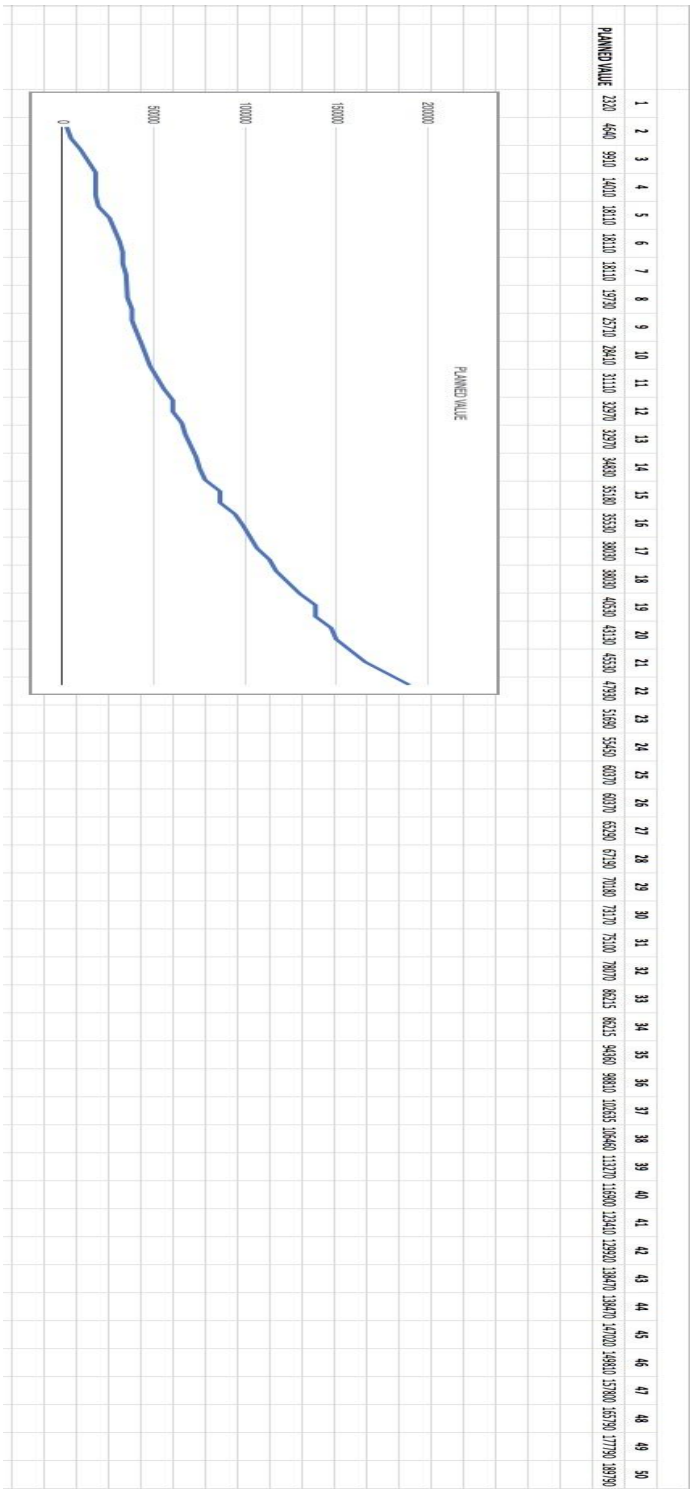
Resource requirements of LMS Manager over the entire duration of the project schedule



Resource requirements of R&D Manager over the entire duration of the project schedule

11-12- Appendix-L- Time Phased Budget

[illegible]

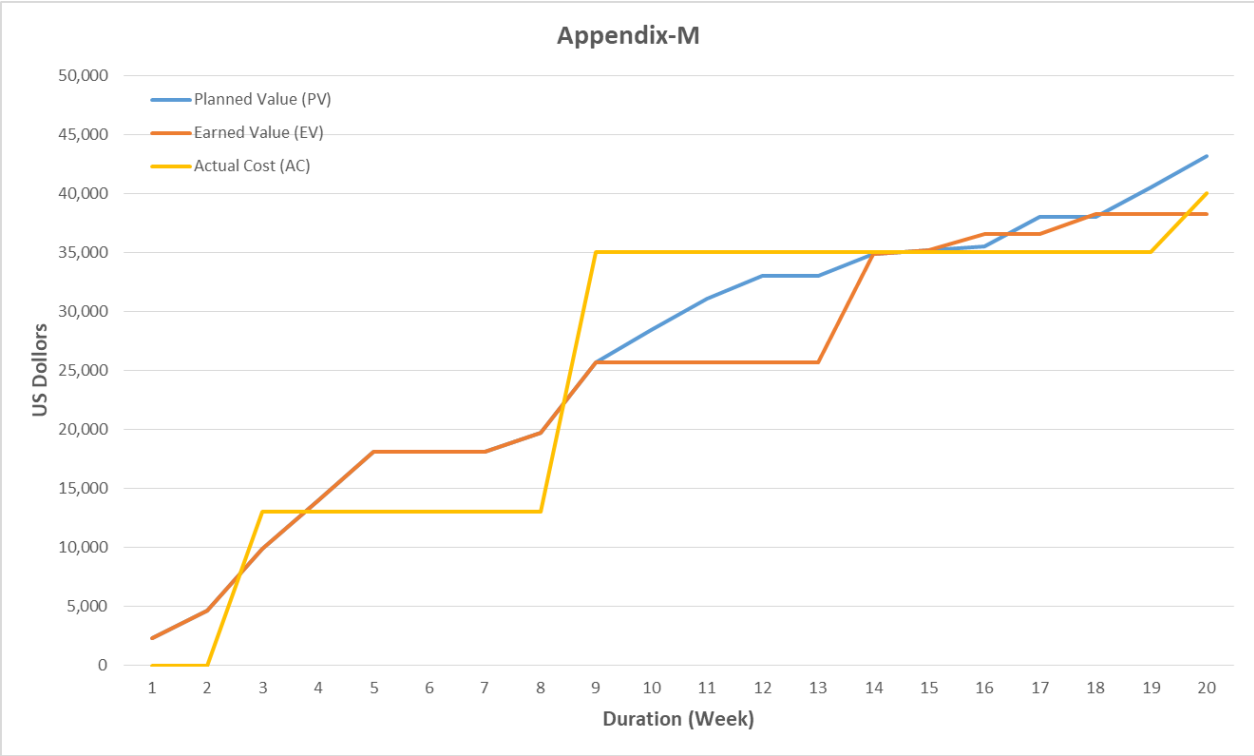


Planned Value Chart

11-13- Appendix-M- Monitoring and Controlling

[illegible]

CV =EV-AC	-1,750
SV= EV-PV	-4,880
CPI = EV/AC	0.96
SPI = EV/PV	0.89
Critical Ratio (CR) = SPI*CPI	0.85
ETC = (BAC-EV)/CR	178,691
EAC=ETC+AC	218,691
The PM may also will set different control limits on different activities, controlling progress in the critical path	



11-14- Appendix-N- Termination

Item No.	Task Description	Required		Required Date	Assigned Responsibility	PR	Notes Reference
		Yes	No				
A.	Project Office (PO) and Project Team (PT) Organization						
1.	Conduct project close-out meeting	X		12/3/18	Project Manager	2	
2.	Establish PO and PT release and reassignment plan	X		12/3/18	Project Manager	1	
3.	Carry out necessary personnel actions	X		12/6/18	Project Manager	2	
4.	Prepare personal performance evaluation on each PO and PT member	X		12/7/18	Project Manager	2	
B.	Instruction and Procedures Issue instructions for:						
1.	Termination of PO and PT	X		12/15/018	Project Manager	2	
2.	Close-out of all work orders and contracts.	X		12/8/18	Project Manager	2	
3.	Termination of reporting procedures	X		12/15/18	Project Manager	2	
4.	Preparation of final report	X		12/3/18	Project Manager	2	Involve the managers of all other departments
5.	Completion and disposition of project file.	X		12/11/18	Project Manager	2	
C.	Financial						
1.	Close-out financial documents and records	X		12/11/18	Finance Manager	2	Involve the managers of all other departments
2.	Audit final charges and costs	X		12/12/18	Finance Manager	2	
3.	Prepare final project financial report	X		12/13/18	Finance Manager	2	Involve IT manager
4.	Collect receivables	X		12/14/18	Finance Manager	2	Involve IT manager
D.	Project Definition						
1.	Document final approve project scope	X		12/11/18	IT Manager	2	
2.	Prepare final project breakdown structure and enter into project file	X		12/11/18	Project Manager	2	
E.	Plans, Budgets and Schedules						
1.	Document actual delivery dates of all contractual deliverable end items	X		12/12/18	Project Manager	2	
2.	Document actual completion dates of all other contractual obligations	X		12/12/18	Project Manager	2	
3.	Prepare final project and task status reports	X		12/15/18	Project Manager	2	Involving managers of all departments
F.	Work Authorization and Control						
1.	Close-out all work orders and contracts	X		12/14/18	Project Manager	2	
G.	Project Evaluation and Control						
1.	Assure completion of all action assignments	X		12/3/18	Project Manager	2	With the aid of managers of all the departments
2.	Prepare final evaluation reports	X		12/4/18	Project Manager	2	With the aid of managers of all the departments
3.	Conduct final review meeting	X		12/13/18	Project Manager	2	Including Managers of all Departments
4.	Terminate financial, manpower, and progress reporting procedures	X		12/15/18	Project Manager	2	

H.	Executive Board Reporting					
1.	Submit final report to Executive Board	X			Project Manager	
I.	Marketing and Contract Administration					
1.	Compile all final contract documents with revision, waivers, and related correspondence		X			
2.	Verify and document compliance with all contractual terms		X			
3.	Compile required proof of shipment and customer acceptance documents		X			
4.	Officially notify customer of contract completion		X			
5.	Initiate and pursue any claims against customer		X			
6.	Prepare and conduct defense against claims by customer		X			
7.	Initiate public relations announcements regarding contract completion	X			Public Relations Manager	2
8.	Prepare final contract status report	X		12/10/18	Admin Manager	2 With the aid of Public Affairs Manager
J.	Extension-New Business					
1.	Document possibilities for project or contract extensions, or other related new business	X		12/10/18	Project Manager	1 Private Organizations 1, 2 and 3
2.	Obtain commitment for extension	X		12/10/18	Project Manager	2
K.	Project Records Control					
1.	Complete project file and transmit to designated manager	X		12/10/18	Project Manager	2
2.	Dispose of other project records as required by established procedures	X		12/10/18	Project Manager	2
L.	Purchasing and Subcontracting For each Purchase Order and Subcontract:					
1.	Document compliance and completion	X		12/12/18	Project Manager	1 Private Organization1,2, 3
2.	Verify final payment and proper accounting to project	X		12/12/18	Finance Manager	1 Private Organization1,2, 3
3.	Notify vendor/contractor of final completion	X		12/12/18	Admin Manager	2 Private Organization1,2, 3
M.	Engineering Documentation					
1.	Compile and store all engineering documentation	X		12/15/18	IT Manager	1 With the aid of R&D and LMS managers
2.	Prepare final technical report	X		12/15/18	IT Manager	2 With the aid of R&D and LMS managers
N.	Site Operations					
1.	Close down site operations		X			
2.	Dispose of equipment and material		X			

References

- [1] J.R. Meredith, Project Management: A Managerial Approach, Eighth Edition. John Wiley & Sons, 2012.